

Ferguson Hemorrhoidectomy in the Surgical Treatment of Hemorrhoids

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Abstract

Aim: To assess the outcome of the conventional Ferguson approach in the surgery of our patients who were operated on for prolapsed internal hemorrhoid.

Method: 769 patients who were treated with the Ferguson technique between March 2007 and January 2017 were included in the study. Patients' medical files were assessed and, the complaints at presentation, anorectal comorbidities, operation findings and postoperative early and late complication data were recorded.

Results: 65% of the patients were male and the mean age was 39 years (18 -81). The durations of complaints varied between one week and 5 years. In the order of higher to lower frequency the complaints were palpable pakers, bleeding and pain respectively. The pakers were at classical locations (3,5,7,11 o'clock) in 69 % of patients. Most of the cases (65%) were grade 4 hemorrhoid. 19 % of patients had anal fissures as anorectal comorbidity. All patients were operated on at the lithotomy position under spinal anaesthesia. Operation time for ferguson technique was on average 20 minutes and postoperative stay in hospital was one day on average. During the postoperative period, 55 patients developed early complications. These included severe abdominal pain in 25 patients (3-25%), bleeding in 3 (0,4%) and urine retention in 28 (3.60%). Late complications developed in 7 patients. There developed anal stenosis in one patient, anal fissure in 3 and fistula with an abscess in 2. Incontinence and recurrence were not observed in any patient.

Conclusion: Ferguson technique is still employed for hemorrhoid surgery. The results of our study support the Ferguson hemorrhoidectomy as a reliable method of preference.

Keywords: Hemorrhoids, hemorrhoidectomy, ferguson hemorrhoidectomy.

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ETHICAL STATEMENT: The study was approved by Kafkas University Ethics Committee with the number 11.11.2018.E.3955.

Hemoroidlerin Cerrahi Tedavisinde Ferguson Hemoroidektomi

Öz

Amaç: Prolabe hemoroidal hastalık nedeniyle ameliyat edilen hastalarımızın ameliyatında geleneksel Ferguson yaklaşımının sonucunu değerlendirmek amaçlanmıştır.

Yöntem: Mart 2007-Ocak 2017 tarihleri arasında Ferguson tekniği ile tedavi edilen 769 hasta çalışmaya dahil edildi. Hastaların tıbbi dosyaları değerlendirilerek başvuru şikayetleri, anorektal komorbiditeler, ameliyat bulguları ve postoperatif erken ve geç komplikasyon verileri kaydedildi.

Bulgular: Hastaların% 65'i erkekti ve ortalama yaş 39 (18-81) idi. Şikayet süreleri bir hafta ile 5 yıl arasında değişiyordu. Şikayetler sık görüldenden az görülene doğru sırasıyla ele gelen pake, kanama ve ağrı idi. Parker'ler, hastaların %69'unda klasik konumdaydı (saat 3,5,7,11). Vakaların çoğu (% 65) 4. derece hemoroiddi. Hastaların%19'unda anorektal komorbidite olarak anal fissür vardı. Tüm hastalar litotomi pozisyonunda spinal anestezi altında ameliyat edildi. Ferguson tekniği için ameliyat süresi ortalama 20 dakika ve ameliyat sonrası hastanede kalış süresi ortalama bir gündü. Postoperatif dönemde 55 hastada erken komplikasyonlar gelişti. Bunlar 25 hastada (%3-25) şiddetli karın ağrısı, 3 hastada (% 0.4) kanama ve 28 hastada (% 3.60) idrar retansiyonu idi. Yedi hastada geç komplikasyonlar gelişti. 1 hastada anal stenoz, 3 hastada anal fissür ve 2 hastada apse ile fistül gelişti. Hiçbir hastada inkontinans ve nüks görülmedi.

Sonuç: Ferguson tekniği halen hemoroid cerrahisinde kullanılmaktadır. Çalışmamızın sonuçları, güvenilir bir tercih yöntemi olarak Ferguson hemoroidektomisini desteklemektedir.

Anahtar Sözcükler: Hemoroid, hemoroidektomi, ferguson hemoroidektomi.

Introduction

Hemorrhoids are normal anatomic structures situated in the anal canal. They are referred to as anal cushions that close the anal canal at rest contributing to continence. They also serve to protect the canal from trauma during defecation.

Anal cushions are referred to as "hemorrhoidal disease" when they become symptomatic. Its incidence increases with age and the prevalence range between 2.9% and 27.9%¹. In the practice of general surgery hemorrhoidectomy for hemorrhoidal disease constitute approximately 7% of all surgical operations.

Ferguson hemorrhoidectomy (FH) technique is still the standard approach employed. It was described by Ferguson for severe cases of hemorrhoidal disease². In this study retrospectively analysed the outcomes FH operations performed on 769 patients in 9-year period in our clinic.

Material and Method

We reviewed the medical records of patients who presented with third and fourth-degree hemorrhoids and were treated with FH in our clinic between 2007 and 2017. The study was approved by Kafkas University Ethics Committee with the number 11.11.2018.E.3955. In this retrospective study, we recorded patients complaints, anorectal co-morbidities, postoperative early and late complications data.

The FH technique we applied was as follows: Hemorrhoid paker was dissected down to the pedicle then the radix was tied up (high ligation)and excised. Then the wound was closed. We paid utmost attention to spare enough in tact mucosal bridges between the pakers in order to avoid anal stenosis complications.

When the patients were discharged from the hospital they were advised to report to the clinic every other day for a visit until 10 days. Digital rectal examinations were repeated to avoid the development of anal stenosis. All patients were enquired at postoperative first and third months and the first year for any complaints. After the first year patients were followed up on the telephone or in person. They were invited for examination upon any anorectal complaint.

Results

Table 1. Patients' clinical complaints

Diagnosis	Number of patients(n)	Percentage(%)
Nodule	745	97
Bleeding	692	90
Pain	146	19
Itching	130	17
Anemia	7	1
Mucoid drainage	84	11

During the 9-year period 769 patients underwent FH. Sixtyfive percent (500) of the patients were male and the mean age was 39 (18-81). At presentation, the patients had complaints for periods varying between one week and five years. In the order of frequency, from the more frequent to the less the complaints were palpable nodule, bleeding, pain, itching, drainage and anemia-related complaints respectively (Table 1). Ninety-seven percent of patients had more than one nodules,

and 25 had a single paker. In 69% of patients, the paker were at the classical situations (3,5,7 and 11 o'clock). In the majority (68%) there were 4-degree hemorrhoids. All patients were operated on at lithotomy position under spinal anesthesia.

Nineteen percent of our patients had anal fissures as anorectal co-morbidities. In some cases, lateral internal sphincterotomy was done along with the FH (Table 2). With the FH technique mean operation time was 20 minutes (7-35) and the mean hospitalization time was one day.

Table 2. The surgical technique employed

Employed Surgical Technique	n	%
Ferguson Hemorrhoidectomy	709	92
Ferguson Hemorrhoidectomy+internal sphincterotomy	60	8

In the postoperative period 72 patients (9.36%) developed early complications. Of these patients 25 (3,25%) had severe pain, 3 (0,4%) had bleeding and 28 (3,60%) had urine retention. During the mean of 18 months (5-50) period of postoperative follow up 8 patients (0.9%) developed late complications. Of these patients, one had anal stenosis, 3 anal fissures and 2 developed fistule-abscesses (Table 3). All patients were followed up for at least 1 year and at most 10 years. No patient developed incontinence or recurrence.

Table 3. Postoperative early and late complications

	n	%
Postoperative early complication		
Severe pain	25	3.25
Bleeding	3	0.4
Urine retention	28	3.6
Postoperative Late Complication		
Anal stenosis	1	0.13
Anal Abscess-fistula	2	0.26
Anal fissur	3	0.39
Recurrence	0	0
Incontinence	0	0

Discussion

Conventional surgical hemorrhoidectomy is the excision of the hemorrhoidal cushion and is generally advised for third and fourth-degree hemorrhoids. FH is the forefront standard approach among the conventional excision techniques in our days. FH appears to be the most effective technique and serves as reference for newly developed ones¹⁻⁸. For cases of third and fourth-degree hemorrhoids our technique of preference in our clinic is FH. However, we employ Reklus approach when we encounter secondary hemorrhoidal nodules during the FH procedure. We employ LIS for cases with anal fissures as co-morbidity.

FH is effective. However, the most important complications of this procedure include urine retention, hemorrhage and pain¹. Postoperative pain complaint is most frequently encountered especially subsequent to hemorrhoidectomy. Hence studies and development of technical procedures focus mostly on this postoperative complication⁹⁻¹¹. This complication frequently leads to delay in the intervention of the disease and definitely affects the choice of procedure to employ. In our clinic, regular analgesic treatment is given to patients during the postoperative 24 hours and yet still 34 patients (4,2%) had severe pain complaint. The etiology of pain subsequent to hemorrhoidectomy is not clear. However, most of the patients who develop this complication are young-aged and males who had anxiety in the preoperative period^{6,12}.

The circular stapler hemorrhoidopexy method has been preferred to decrease the severity of postoperative pain and at the same time increase the patient's content. Prior studies that on this method emphasized the view there is a decrease in pain and an increase in patient's content. However, as time passed by, assessments of this approach by Cochrane methodology showed that the approach is not all that effective and moreover it is associated with increased rates of recurrence, rectal prolapsus and hemorrhoidal symptoms^{3,13,14}.

It is possible to carry out hemorrhoidectomy using other cutting instruments (like Harmonic blade, laser, ultrasonic diathermy and ligasure) instead of classical lancet and scissors^{6,9,11,15}.

Despite the advantages (like less bleeding and less pain due to less tissue injury) of the cutting instruments they are not preferred because of the cost and that they are not commonly employed. Moreover, studies have not shown any significant superiority over the classical lancet and scissors^{16,17}. For economic reasons, we could not employ some of the new techniques and we have very little experience with them in our clinic. The utilization of a bipolar electrothermal sealing device (Ligasure-M) for hemorrhoidectomy decrease pain substantially but there is still the need for long-term follow-up studies to determine the recurrence rate^{11,12}.

We did not observe a significant in early complications difference between our findings and previous studies. Internal anal sphincter spasm plays role in the pathogenesis of hemorrhoidal

disease and in fact, could be responsible for the anal pain during the postoperative period following hemorrhoid surgery. There are reports that internal anal sphincter spasm has a significant effect on the development of post-operative early complications that include pain, urine retention and anal stenosis^{10,16}. Another report showed that topical diltiazem treatment alleviated the pain in a series¹⁰. Together with the FH procedure, we performed LIS in 60 of our patients who had anal fissure as co-morbidity, and none of these patients had postoperative pain complaints.

Urine retention is one of the most frequent early postoperative complications (2-30%)¹⁷⁻¹⁹. The rate of this complication was 3,6% in our series and most of the cases were resolved by warmth application and relevant advices. Bleeding within 24 hours of operation occurs at the rate of 0,03-6% and is generally as a result of technical error which requires surgical intervention. Two of our patients developed bleeding in the early postoperative period. One of them required emergent surgery when the pedicle was resutured, and the other was treated in the patient room by wound exploration and tight wound dressing successfully. Bleeding during the late postoperative period (between days 5-10) occurs at rate of 0,5-4% due to the opening of the sutured pedicle. Reoperation, balloon tamponade or packing may be necessary in this case. During the healing process of hemorrhoidectomy wound, as observed in our study, anal fissures rarely develop (1-2,6%). However, this rate is higher (6,3%) in case stapler hemorrhoidopexy is done^{19,20}. Patients must be given relevant dietary advice to avoid constipation during the postoperative period. Dietary and local anesthetic treatments were sufficient to treat the 3 patients who developed constipation in our series. Anal stenosis is the most feared. The postoperative complication occurs at the rate of 0-6%^{18,20}. Anal stenosis developed in one of our patients who had three hemorrhoidal pokers. The patient reported for visit only once in the postoperative 15 days and was not cooperative with self digital rectal examination although he was given the education to do so. Sparing intact mucosal bridges and regular digital rectal examination in the early postoperative period is essential to avoid anal stenosis.

In our clinic, all hemorrhoidectomy patients are called for visits postoperatively at the day, first and third months and at the end of the first year. Patients are advised to report any symptoms attributable to the anorectal region. For successful treatment of hemorrhoidal disease, in choosing the management method much more attention is paid onto late hemorrhoidal symptoms and recurrence rather than early postoperative complications¹⁹. It has been reported that anal incontinence develops at the rate of (0-12%) after hemorrhoidectomy²⁰.

However, there were no anal incontinence cases in our series. FH has been accepted to be the most effective approach for the treatment of hemorrhoidal disease. Our results support this view since we employ this technique in our clinic and none of our patients developed anal incontinence or recurrence.

Conclusion

Studies for the appropriate choice of approach for treating hemorrhoidal disease lays focus on increasing patients content, decreasing early postoperative complications, and preventing late stage recurrence, prolapsus and other hemorrhoidal symptoms are still being carried out. However, for the time being FH stands as the best procedure of choice for grade 3 and 4 hemorrhoidal diseases.

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